PERGAMON

Journal of Quantitative Spectroscopy & Radiative Transfer 82 (2003) III–VI

Journal of Quantitative Spectroscopy & Radiative Transfer

www.elsevier.com/locate/jqsrt

# List of Contents

## NUMBER 1

**L.S. Rothman, K. Chance** and **A. Goldman** — 1 Preface

**L.S. Rothman, A. Barbe, D. Chris Benner, L.R. Brown, C. Camy-Peyret, M.R. Carleer, K. Chance, C. Clerbaux, V. Dana, V.M. Devi, A. Fayt, J.-M. Flaud, R.R. Gamache, A. Goldman, D. Jacquemart, K.W. Jucks, W.J. Lafferty, J.-Y. Mandin, S.T. Massie, V. Nemtchinov, D.A. Newnham, A. Perrin, C.P. Rinsland, J. Schroeder, K.M. Smith, M.A.H. Smith, K. Tang, R.A. Toth, J. Vander Auwera, P. Varanasi** and **K. Yoshino** — 5 The HITRAN molecular spectroscopic database: edition of 2000 including updates through 2001

**Q. Zou** and **P. Varanasi** — 45 Laboratory measurement of the spectroscopic line parameters of water vapor in the 610–2100 and 3000–4050 $cm^{-1}$ regions at lower-tropospheric temperatures

**M.-F. Mérienne, A. Jenouvrier, C. Hermans, A.C. Vandaele, M. Carleer, C. Clerbaux, P.-F. Coheur, R. Colin, S. Fally** and **M. Bach** — 99 Water vapor line parameters in the 13 000–9250 $cm^{-1}$ region

**S. Fally, P.-F. Coheur, M. Carleer, C. Clerbaux, R. Colin, A. Jenouvrier, M.-F. Mérienne, C. Hermans** and **A.C. Vandaele** — 119 Water vapor line broadening and shifting by air in the 26,000–13,000 $cm^{-1}$ region

| | | |
|---|---|---|
| **P.-F. Coheur, C. Clerbaux, M. Carleer, S. Fally, D. Hurtmans, R. Colin, C. Hermans, A.C. Vandaele, B. Barret, M.D. Mazière and H.D. Backer** | 133 | Retrieval of atmospheric water vapor columns from FT visible solar absorption spectra and evaluation of spectroscopic databases |
| **R.N. Tolchenov, M. Tanaka, J. Tennyson, N.F. Zobov, S.V. Shirin, O.L. Polyansky and A.N. Maurellis** | 151 | Water line intensities in the near-infrared and visible |
| **S.A. Tashkun, V.I. Perevalov, J.-L. Teffo, A.D. Bykov and N.N. Lavrentieva** | 165 | CDSD-1000, the high-temperature carbon dioxide spectroscopic databank |
| **A. Goldman, T.M. Stephen, L.S. Rothman, L.P. Giver, J.-Y. Mandin, R.R. Gamache, C.P. Rinsland and F.J. Murcray** | 197 | The 1-μm $CO_2$ bands and the $O_2$ (0–1) $X^3\Sigma_g^- - a^1\Delta_g$ and (1–0) $X^3\Sigma_g^- - b^1\Sigma_g^+$ bands in the Earth atmosphere |
| **C.P. Rinsland, J.-M. Flaud, A. Perrin, M. Birk, G. Wagner, A. Goldman, A. Barbe, M.-R. De Backer-Barilly, S.N. Mikhailenko, Vl.G. Tyuterev, M.A.H. Smith, V.M. Devi, D.C. Benner, F. Schreier, K.V. Chance, J. Orphal and T.M. Stephen** | 207 | Spectroscopic parameters for ozone and its isotopes: recent measurements, outstanding issues, and prospects for improvements to HITRAN |
| **L.R. Brown, D.C. Benner, J.P. Champion, V.M. Devi, L. Fejard, R.R. Gamache, T. Gabard, J.C. Hilico, B. Lavorel, M. Loete, G.Ch. Mellau, A. Nikitin, A.S. Pine, A. Predoi-Cross, C.P. Rinsland, O. Robert, R.L. Sams, M.A.H. Smith, S.A. Tashkun and Vl.G. Tyuterev** | 219 | Methane line parameters in HITRAN |
| **A. Nikitin, J.P. Champion and Vl.G. Tyuterev** | 239 | The MIRS computer package for modeling the rovibrational spectra of polyatomic molecules |
| **P. Cassam-Chenaï** | 251 | Ab initio predictions for the Q-branch of the methane vibrational ground state |
| **R. Nassar and P. Bernath** | 279 | Hot methane spectra for astrophysical applications |

**I. Kleiner, G. Tarrago, C. Cottaz, L. Sagui, L.R. Brown, R.L. Poynter, H.M. Pickett, P. Chen, J.C. Pearson, R.L. Sams, G.A. Blake, S. Matsuura, V. Nemtchinov, P. Varanasi, L. Fusina** and **G. Di Lonardo** 293 $NH_3$ and $PH_3$ line parameters: the 2000 HITRAN update and new results

**A. Goldman, M.T. Coffey, J.W. Hannigan, W.G. Mankin, K.V. Chance** and **C.P. Rinsland** 313 HBr and HI line parameters update for atmospheric spectroscopy databases

**V.M. Devi, D.C. Benner, M.A.H. Smith, C.P. Rinsland, S.W. Sharpe** and **R.L. Sams** 319 A multispectrum analysis of the $\nu_1$ band of $H^{12}C^{14}N$: Part I. Intensities, self-broadening and self-shift coefficients

**C.P. Rinsland, V.M. Devi, M.A.H. Smith, D.C. Benner, S.W. Sharpe** and **R.L. Sams** 343 A multispectrum analysis of the $\nu_1$ band of $H^{12}C^{14}N$: Part II. Air- and $N_2$-broadening, shifts and their temperature dependences

**D. Jacquemart, J.-Y. Mandin, V. Dana, C. Claveau, J. Vander Auwera, M. Herman, L.S. Rothman, L. Régalia-Jarlot** and **A. Barbe** 363 The IR acetylene spectrum in HITRAN: update and new results

**M.W. Shephard, A. Goldman, S.A. Clough** and **E.J. Mlawer** 383 Spectroscopic improvements providing evidence of formic acid in AERI-LBLRTM validation spectra

**M.M. Yamada, M. Kobayashi, H. Habara, T. Amano** and **B.J. Drouin** 391 Submillimeter-wave measurements of the pressure broadening of BrO

**J. Fischer, R.R. Gamache, A. Goldman, L.S. Rothman** and **A. Perrin** 401 Total internal partition sums for molecular species in the 2000 edition of the HITRAN database

**S.T. Massie** and **A. Goldman** 413 The infrared absorption cross-section and refractive-index data in HITRAN

**C. Chackerian, S.W. Sharpe** and **T.A. Blake** 429 Anhydrous nitric acid integrated absorption cross sections: 820–5300 $cm^{-1}$

**G. Wagner** and **M. Birk** 443 New infrared spectroscopic database for chlorine nitrate

**V. Nemtchinov** and **P. Varanasi** 461 Thermal infrared absorption cross-sections of $CF_4$ for atmospheric applications

**V. Nemtchinov** and **P. Varanasi** 473 Thermal infrared absorption cross-sections of $CCl_4$ needed for atmospheric remote sensing

**C.P. Rinsland, S.W. Sharpe** and **R.L. Sams** 483 Temperature-dependent absorption cross-sections in the thermal infrared bands of $SF_5CF_3$

**J. Orphal** and **K. Chance** 491 Ultraviolet and visible absorption cross-sections for HITRAN

**J. Boissoles, C. Boulet, R.H. Tipping, A. Brown** and **Q. Ma** 505 Theoretical calculation of the translation-rotation collision-induced absorption in $N_2$–$N_2$, $O_2$–$O_2$, and $N_2$–$O_2$ pairs

**Q. Ma** and **R.H. Tipping** 517 A simple analytical parameterization for the water vapor millimeter wave foreign continuum